

Amendments to the Claims

The listing of claims will replace all prior versions of claims in the application.

1. *(Presently Amended)* A method of interfacing between one or more requestors and one or more airline availability information sources, comprising
 - querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - rounding-up actual departure times for flights, providing at least the rounded-up actual departure times to a hashing function, and storing information associated with the flights in a hash table based on resulting rounded-up hash table indexes;
 - rounding-down actual departure times for each flight, providing at least the rounded-down actual departure times to the hashing function, and storing information associated with the flights in the hash table based on resulting rounded-down hash table indexes;
 - permitting a requestor to specify approximate departure times in a request for airline availability information;
 - receiving queries from requestors for airline availability information;
 - prioritizing the requestor queries;
 - processing the requestor queries in accordance with the associated priorities;
 - searching a cache for requested airline availability information, including,
 - rounding-up a requestor-specified departure time, providing the rounded-up requestor-specified departure time to the hash function, and
 - searching the hash table based on a resulting hash table index, and

rounding-down the requestor-specified departure time, providing the rounded-down requestor-specified departure time to the hash function, and searching the hash table based on a resulting hash table index;

determining to provide the requestors with at least one of real-time airline availability information and cached airline availability information based at least in part on one or more factors associated with one or more of the requestors, the requestor queries, the requested airline availability information, and the airline availability information sources; and

providing information to the requestors in accordance with the determining.

2.-55. (cancelled).

56. *(Presently Amended)*. A method of interfacing between one or more requestors and one or more airline availability information sources, comprising [The method according to claim 55, wherein the proactively generating step further comprises]:

querying one or more airline availability information sources for airline availability information;

receiving the requested airline availability information from the one or more airline availability information sources;

caching the received airline availability information;

receiving queries from requestors for airline availability information;

prioritizing the requestor queries;

processing the requestor queries in accordance with the associated priorities;

determining to provide the requestors with at least one of real-time airline availability information and cached airline availability information based at least in part on one or more factors associated with one or more of the requestors, the

requestor queries, the requested airline availability information, and the airline availability information sources;

providing information to the requestors in accordance with the determining;

proactively generating one or more queries independent of requestor queries to update cached airline availability information according to multiple priorities;

encoding the multiple priorities into a mathematical function that assigns a combined priority value to units of cached airline availability information, and updating the cached airline availability information according to the associated combined priority values; and

sending the one or more proactively generated queries to an airline availability information source and caching information returned therefrom.

57. - 140. (*cancelled*).

141. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:

querying one or more airline availability information sources for airline availability information;

receiving the requested airline availability information from the one or more airline availability information sources;

caching the received airline availability information;

receiving queries from requestors for airline availability information;

determining to provide the requestors with at least one of the following types of airline availability information,

real-time information, and

cached information;

providing information to the requestors in accordance with the determining;

proactively generating queries independent of the requestor queries;

generating a plurality of storage buckets in a memory;

associating at least a portion of the buckets with various time-to-departures;

ordering the buckets according at least to their associated time-of-departures;

bucketing the proactive queries according at least to their associated time-to-departures;

ordering the proactive queries within the buckets at least according to ages of previously cached information associated with the proactive queries;

re-bucketing the proactive queries as their associated time-to-departures change;

selecting a bucket for processing according to the ordering of the buckets and processing the proactive queries within the selected bucket, skipping proactive queries for which information is presently cached and newer than a predetermined age, wherein the processing includes sending the proactively generated queries to one or more airline availability information sources according to the bucket selecting; and

caching information returned from the proactive queries.

142. (*Previously Presented*)The method according to claim 141, wherein:
- the associating step includes associating the buckets with various time-to-departures and according to one or more modes of transportation; and
- the ordering step includes ordering the buckets according to the nearness to time-of-departures and the associated modes of transportation.

143. (*Previously Presented*) The method according to claim 141, further comprising:
- adding the requestor queries to a query priority queue;
 - adding proactively generated queries from buckets selected in accordance with the selecting, to the query priority queue, at lower priorities than the requestor queries; and
 - processing the requestor queries and the proactively generated queries in the query priority queue according to their priorities.
144. (*Previously Presented*) The method according to claim 143, wherein the adding of requestor queries step comprises:
- separating a first requestor query into one or more sub-queries;
 - prioritizing the one or more first requestor sub-queries with respect to one another;
 - placing the one or more first requestor sub-queries in the query priority queue;
 - separating a second requestor query into one or more sub-queries;
 - prioritizing the one or more second requestor sub-queries with respect to one another; and
 - placing the one or more second requestor sub-queries in the query priority queue, ordering the first requestor sub-queries with respect to the second requestor sub-queries according to associated times of receipt, resolving priority disputes between simultaneously received first and second requestor queries so that higher priority sub-queries of the first and second requestor are processed before lower priority sub-queries of the first and second requestor.

145. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information;
 - providing information to the requestors in accordance with the determining; and
 - querying one or more of the information sources through one or more proxies, including monitoring an operational status of the one or more proxies and selecting proxies for querying based on the monitored operational status.

146. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information;
 - providing information to the requestors in accordance with the determining; and
 - querying one or more of the information sources through one or more proxies, including monitoring response times for the one or more proxies and selecting proxies for querying based at least on the response times.

147. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information;
 - providing information to the requestors in accordance with the determining; and
 - querying one or more of the information sources through one or more proxies, including maintaining a list of unsupported suppliers for which information is not available on the one or more information sources and returning queries for information from the unsupported suppliers without querying an information source.

148. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information; and
 - providing information to the requestors in accordance with the determining; and
 - querying one or more of the information sources through one or more proxies, including maintaining proxy records for available proxies in a proxy queue and removing a higher priority proxy record from the proxy queue to process a query.
149. (*Previously Presented*) The method according to claim 148, further comprising maintaining the proxy queue as part of a query priority queue.
150. (*Canceled*).
151. (*Canceled*).

152. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving a query from a requestor for airline availability information, wherein the query includes one or more sub-queries;
 - initiating a control thread for the query;
 - initiating a worker thread for each sub-query associated with the query;
 - prioritizing the worker threads with respect to one another;
 - processing the worker threads according to the associated priorities;
 - determining to provide the requestor with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information; and
 - providing information to the requestor in accordance with the determining.

153. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - sharing a flight availability count record between a plurality of cached flight records;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information; and
 - providing information to the requestors in accordance with the determining.

154. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - associating multiple flight records as married flight records in the cache;
 - sharing a flight availability count record between at least one of the multiple flight records and another flight record in the cache;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information; and
 - providing information to the requestors in accordance with the determining.

155. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information;
 - providing information to the requestors in accordance with the determining; and
 - searching for cached information after waiting a pre-determined time for real-time information.

156. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information;
 - providing information to the requestors in accordance with the determining; and
 - communicating with at least a portion of the one or more airline availability information sources through proxies, whereby the proxies interface with the at least a portion of the one or more airline availability information sources using airline availability information source specific codes.

157. (*Previously Presented*) The method according to claim 156, wherein the communicating step comprises:
- measuring one or more response characteristics associated with the proxies;
 - prioritizing the proxies according to the response characteristics measurements; and
 - maintaining a proxy priority queue, whereby queries are passed to higher priority proxies.
158. (*Previously Presented*) The method according to claim 156, wherein the communicating step comprises:
- identifying one or more airline availability information sources that proxies cannot communicate with; and
 - filtering out queries directed to the identified airline availability information sources.
159. (*Previously Presented*) The method according to claim 156, wherein the communicating step comprises:
- monitoring an operational status of the proxies; and
 - optimizing use of the proxies based on the operational status of the proxies.
160. (*Previously Presented*) The method according to claim 156, further comprising simulating replies from the proxies.

161. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information;
 - providing information to the requestors in accordance with the determining;
 - proactively generating one or more queries independent of requestor queries, including generating background threads that pose queries that appear to come from requestors; and
 - sending the one or more proactively generated queries to an airline availability information source and caching information returned therefrom.

162. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information;
 - providing information to the requestors in accordance with the determining;
 - proactively generating one or more queries independent of requestor queries, including filtering one or more queries out of proactive caching; and
 - sending the one or more proactively generated queries to an airline availability information source and caching information returned therefrom.
163. (*Previously Presented*) The method according to claim 162, wherein the filtering step includes filtering out queries related to airline flights for which fares are not available.
164. (*Previously Presented*) The method according to claims 162, wherein the filtering step includes filtering out queries related to flights on unsupported carriers.
165. (*Previously Presented*) The method according to claims 162, wherein the filtering step includes filtering out queries related to flights that users are not expected to request.

166. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and
 - cached information;
 - providing information to the requestors in accordance with the determining;
 - proactively generating queries independent of requestor queries and assigning priority to the proactively generated queries according to a total number of available seats; and
 - sending the one or more proactively generated queries to an airline availability information source and caching information returned therefrom.
167. (*Canceled*).
168. (*Canceled*).

169. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - predicting an availability status based on prior observed variables, including prior availability information, wherein the predicting includes,
 - identifying one or more factors associated with availability status,
 - learning a relationship between historical values for the one or more factors and historical values for availability status,
 - generating a function according to the learned relationship, and
 - providing new values for the one or more factors to the function,
 - whereby the function outputs predicted values for availability status;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information,
 - cached information, and
 - predicted information; and
 - providing information to the requestors in accordance with the determining.

170. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:
- querying one or more airline availability information sources for airline availability information;
 - receiving the requested airline availability information from the one or more airline availability information sources;
 - caching the received airline availability information;
 - receiving queries from requestors for airline availability information;
 - separating a first requestor query into one or more sub-queries;
 - prioritizing the one or more first requestor sub-queries with respect to one another;
 - placing the one or more first requestor sub-queries in a query priority queue;
 - separating a second requestor query into one or more sub-queries;
 - prioritizing the one or more second requestor sub-queries with respect to one another;
 - placing the one or more second requestor sub-queries in the query priority queue, ordering the first requestor sub-queries with respect to the second requestor sub-queries according to associated times of receipt, resolving priority disputes between simultaneously received first and second requestor queries so that higher priority sub-queries of the first and second requestors are processed before lower priority sub-queries of the first and second requestors;
 - processing the queries in the query priority queue according to their associated priorities;
 - determining to provide the requestors with at least one of the following types of airline availability information,
 - real-time information, and

cached information; and

providing information to the requestors in accordance with the determining.

171. (*Previously Presented*) A method of interfacing between one or more requestors and one or more airline availability information sources, comprising:

monitoring airline availability information traffic between an airline availability information source and one or more clients of the airline availability information source;

caching at least a portion of the monitored airline availability information traffic;

determining a likelihood that information will be received within a period of time by the monitoring;

generating proactive queries for information not likely to be received within the period of time;

caching information returned in response to the proactive queries;

receiving a queries from requestors for airline availability information;

determining to provide the requestors with at least one of the following types of airline availability information,

real-time information, and

cached information; and

providing information to the requestors in accordance with the determining.